

WE CLAIM:

## 1. A golf ball comprising:

5 a core comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc dyacrylate; an organic peroxide; and at least one filler material; and,

a cover layer comprising a single ionomer resin having an acid content that is at least 95% neutralized, a flex modulus of at least 30kpsi and a Shore D hardness no greater than 55;

10 wherein the golf ball has a PGA compression of about 85, a weight of between about 45.2 to 46.0 g; a coefficient of restitution greater than about .700, and a Shore D hardness no greater than about 55 and exhibits a spin rate of at least 7500 rpm when struck with an iron.

## 15 2. A golf ball according to claim 1, wherein the ionomer resin comprises:

- a) an alpha olefin;
- b) an ethylenically unsaturated carboxylic acid;
- c) a metal cation in an amount sufficient to neutralize about 100% of the carboxylic acid;
- d) at least one softening monomer, selected from alkyl acrylate, and alkyl methacrylate; and
- e) a metal stearate.

## 25 3. A golf ball according to claim 2, wherein the ethylenically unsaturated carboxylic acid is an acrylic or methacrylic acid in an amount no more than about 10% by weight.

## 30 4. A golf ball according to claim 2 wherein the metal cation is selected from the group consisting of lithium, sodium, potassium, magnesium, calcium, barium, or zinc, or a combination of such cations.

5. A golf ball according to claim 2 wherein the metal cation is a magnesium cation.

5 6. A golf ball according to claim 1 wherein the metal stearate is a magnesium stearate.

10 7. A golf ball according to claim 1 wherein the filler material is barium sulfate.

15 8. A golf ball according to claim 1, wherein the core has a diameter of about 1.54", a weight of about 36 grams and a PGA compression of no more than about 90.

15 9. A golf ball according to claim 1, wherein the cover is no more than about .07" thick.

20 10. A golf ball according to claim 1, wherein the ball has an overall diameter of about 1.68" and a weight of about 45.5 grams.

25 11. A golf ball according to claim 1 wherein the ionomer resin has a melt flow index of about .65 g/10 min.

12. A golf ball comprising:

25 a core having a PGA compression no greater than about 90, comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc dyacrylate; an organic peroxide, and a filler material; and,

a cover comprising a blend of:

30 i) a single ionomeric resin terpolymer comprising ethylene, an acrylic or methacrylic acid, an alkyl acrylate, the acrylic or methacrylic acid;

ii) one or more alkalai metal, transition metal or alkaline earth metal cation in amount sufficient

to neutralized 100% of the acrylic or methacrylic acid; and

iii) at least one metal stearate;

5 wherein the golf ball has a PGA compression of about 85; a coefficient of restitution greater than about .700; a Shore D hardness no greater than about 55; and a spin rate of at least 2700 RPM when struck with an 10° loft driver with a swing speed of about 90 mph.

10 13. A golf ball according to claim 12 wherein the ball, when struck with a standard 9-iorn, has a spin rate of at least 7500 rpm.

15 14. A golf ball according to claim 12 wherein the ball, when struck with a standard 5-iorn, a spin rate of at least 4600 rpm.

15. A golf ball comprising:

20 a core having a PGA compression no greater than about 90, comprising at least one high cis content polybutadiene; zinc oxide; zinc stearate; zinc dyacrylate; an organic peroxide, and a filler material; and,

a cover comprising a blend of:

25 i) an ionomeric resin terpolymer comprising ethylene, an acrylic or methacrylic acid, an alkyl acrylate, the acrylic or methacrylic acid;

ii) one or more alkalai metal, transition metal or alkaline earth metal cation in amount sufficient to neutralized 100% of the acrylic or methacrylic acid; and

30 iii) at least one metal stearate;

wherein the core and the cover materials are selected so that the golf ball has the following spin rate characteristics:

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- i) a spin rate of at least 7500 rpm when struck with a standard 9-iron
- ii) a spin rate of at least 4600 rpm when struck with a standard 5 iron; and
- iii) a spin rate of at least 2700 rpm when struck with a 10° loft driver with a swing speed of about 90 mph.